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NOIDA INSTITUTE OF ENGINEERING AND TECHNOLOGY, GREATER NOIDA
(An Autonomous Institute Affiliated to AKTU, Lucknow)

B.Tech

SEM: II - THEORY EXAMINATION (2025- 2026)

Subject: Statistical Analysis and Data Management

Time: 2 Hours

Max. Marks: 50

General Instructions:

IMP: Verify that you have received the question paper with the correct course, code, branch etc.

1. This Question paper comprises of **three Sections -A, B, & C**. It consists of Multiple Choice Questions (MCQ's) & Subjective type questions.

2. Maximum marks for each question are indicated on right -hand side of each question.

3. Illustrate your answers with neat sketches wherever necessary.

4. Assume suitable data if necessary.

5. Preferably, write the answers in sequential order.

6. No sheet should be left blank. Any written material after a blank sheet will not be evaluated/checked.

SECTION-A

15

1. Attempt all parts:-

- (1.1) State what is the primary role of statistics in data science? [CO1,K1] 1
- (a) To make data look attractive
 - (b) To draw meaningful insights from data
 - (c) To store data efficiently
 - (d) To delete outliers
- (1.2) Identify which company developed SAS? [CO2,K1] 1
- (a) IBM
 - (b) SAS Institute
 - (c) Microsoft
 - (d) Oracle
- (1.3) Identify, which of the following is a valid SAS variable name? [CO3,K1] 1
- (a) 1student
 - (b) total marks
 - (c) _emp_id
 - (d) emp-code
- (1.4) State which of the following is NOT a component of a BI system? [CO4,K1] 1
- (a) Data Warehouse
 - (b) ETL Process
 - (c) Operating System Kernel
 - (d) OLAP Engine
- (1.5) State, BI delivers value at which levels of an organization? [CO4,K1] 1

- (a) Only strategic level
- (b) Only operational level
- (c) Strategic, tactical, and operational levels
- (d) Only at the IT department level

2. Attempt all parts:-

- | | | |
|-------|---|---|
| (2.1) | Distinguish between discrete and continuous data? [CO1,K4] | 2 |
| (2.2) | Discuss in detail what is SAS Studio also explain its merits? [CO2,K1] | 2 |
| (2.3) | Explain and write a SAS program using WHERE to filter records where Score > 70 ? [CO3,K2] | 2 |
| (2.4) | Explain and write a SAS program using DO loop to generate numbers from 1 to 5? [CO3,K2] | 2 |
| (2.5) | Explain in detail any four core components of a Business Intelligence (BI) system? [CO4,K2] | 2 |

SECTION-B

15

3. Answer any three of the following:-

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|-------|--|---|
| (3.1) | Differentiate between qualitative and quantitative data with suitable examples? [CO1,K4] | 5 |
| (3.2) | Explain the advantages and disadvantages of SAS. Compare SAS with Python/R and justify when SAS is preferred? [CO2,K2] | 5 |
| (3.3) | Explain the role of SAS in Analytics and Data Science. Give at least four real-world applications with examples? [CO2,K2] | 5 |
| (3.4) | Explain in detail the process of merging datasets in SAS. Include all types of joins, the use of the IN= option logic, and illustrate with a real-world example involving three datasets? [CO3,K2] | 5 |
| (3.5) | Explain how to join tables using SQL in SAS. Provide a clear explanation along with a suitable example to illustrate the concept? [CO4,K2] | 5 |

SECTION-C

20

4. Answer any five of the following:-

- | | | |
|-------|---|---|
| (4.1) | Discuss why is the combination of INDEX and MATCH preferred over VLOOKUP? Explain any two advantages in detail? [CO1,K2] | 4 |
| (4.2) | Explain and Name the Excel functions used to return the slope and intercept of a regression line. Also mention their syntax? [CO1,K2] | 4 |
| (4.3) | Explain the important SAS procedures: PROC PRINT, PROC MEANS, PROC FREQ, PROC SORT with examples? [CO2,K2] | 4 |
| (4.4) | Discuss and write a complete SAS program that creates a student dataset, adds a grade variable, filters top scorers, and displays results? [CO2,K2] | 4 |
| (4.5) | Explain the use of PROC TABULATE in SAS for creating multidimensional reports. Compare it with PROC REPORT? [CO3,K2] | 4 |
| (4.6) | Differentiate between SAS datasets and external files. Explain their characteristics and uses with suitable examples? [CO3,K4] | 4 |
| (4.7) | Explain the role of Business Intelligence, data warehousing, statistical analysis, and | 4 |

SQL in organizational decision-making and analytics? [CO4,K2]

- (4.8) Explain the differences between PROC SQL and traditional SAS procedures in terms of syntax, functionality, and usage, with suitable examples? [CO4,K2] 4

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